



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,328	06/13/2005	Jun Kuai	WYTH-P01-001	8048
28120	7590	06/01/2009		
ROPER & GRAY LLP PATENT DOCKETING 39/41 ONE INTERNATIONAL PLACE BOSTON, MA 02110-2624			EXAMINER EMCH, GREGORY S	
			ART UNIT	PAPER NUMBER
			1649	
			MAIL DATE	DELIVERY MODE
			06/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,328

Applicant(s)

KUAI ET AL.

Examiner

Gregory S. Emch

Art Unit

1649

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2008 and 22 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 17, 22-25, 33-37, 39 and 44-56 is/are pending in the application.
- 4a) Of the above claim(s) 3-7, 9, 10, 17, 22-25, 33-37, 39 and 44-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Claims 1, 3-7, 9, 10, 17, 23 and 24 have been amended as requested in the amendment filed on 22 January 2009. Following the amendment, claims 1-12, 17, 22-25, 33-37, 39 and 44-56 are pending in the instant application.

Election/Restrictions

In the reply filed on 14 October 2008, applicants assert that original claim 1 is drawn to a protein complex comprising... (iii) "at least one polypeptide selected from the group consisting of: NAK, RasGAP3, TRCP1, TRCP2, and a functional variant thereof." Applicants assert that the skill artisan would appreciate that the claimed protein complex may optionally comprise two, three, or four polypeptides selected from NAK, RasGAP3, TRCP1, and TRCP2. Applicants assert that in both responses filed on October 5, 2007 and March 11, 2008, applicants elected TRCP1, with traverse, as a species for search purpose only. Applicants assert that since original claim 1 clearly recites the option of further comprising the other three non-elected species (e.g., NAK, RasGAP3, and TRCP2), dependent claim 10 properly depends from claim 1, although it recites non-elected species in addition to the elected TRCP1 species. Applicants assert that claim 10 recites another elected species (TRAP2). Applicants assert that claim 10 depends from claim 8 which recites the option of further comprising at least one polypeptide selected from: TRADD, TRAF2, and TRAP2. Thus, applicants assert that dependent

claim 10 properly depends from claim 8, although it recites non-elected species in addition to the elected TRAP2 species and applicants request that claim 10 be rejoined into the elected invention. Applicants assert that claim 24 depends from claims 17 and 23, although it recites non-elected species in addition to the elected TRCP1 and TRAP2 species. Thus, applicants request that claim 24 be rejoined into the elected invention. Applicants assert that they have amended withdrawn claims 3-4 and 6-9 to clarify that the protein complex comprises TRCP 1 (the elected species) in addition to non-elected species. As such, applicants request that claims 3-4 and 6-9 be rejoined into the elected invention.

Applicants' arguments have been fully considered and are not found persuasive. First, contrary to applicants' assertion, it is noted that applicants elected the species TRCP1 without traverse. As stated previously, applicants' election of the species TRCP1 in the reply filed on 05 October 2007 is acknowledged. Because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Further, although claims 3, 4, 6-10 and 24 comprise some elected subject matter as pointed out by applicants, said claims require non-elected subject matter. The claims do not require the non-elected subject matter in the alternative (as previously encompassed by the claims). Hence, these claims require a different search than is required of the elected and previously searched claims 1, 2, 5, 8, 11, 12, 17, 22, 23 and 25. Accordingly, as stated in the restriction requirement dated 27 August 2007, species

a-i do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: they are drawn to unique and distinct proteins with independent structure and functions. Each species must be searched separately and given that claims 3, 4, 6-10 and 24 require a search of non-elected subject matter, these claims are directed to non-elected subject matter. Applicants are reminded that upon the allowance of a generic claim, applicants will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicants must indicate which are readable upon the elected species. MPEP § 809.02(a).

As stated previously, applicants' election of the species TNFR1 in the reply filed on 11 March 2008 is acknowledged. Because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicants' election of the species TRAP2 in the reply filed on 11 March 2008 is acknowledged. Because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

It is noted that newly amended claim 5 is now dependent on withdrawn claim 3. Hence, claim 5 is now directed to non-elected subject matter. Furthermore, newly amended claim 17 and its dependent claims 22, 23 and 25 are now drawn to non-

elected subject matter. Newly amended claim 17 now requires the non-elected species of NAK and TRCP2, whereas these species were previously required in the alternative to the elected species. Hence, claims 17, 22, 23 and 25 require a different search for the non-elected subject matter and are thus directed to non-elected subject matter.

Claims 3-7, 9, 10, 17, 22-25, 33-37, 39 and 44-56 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim. Applicants timely traversed the restriction requirement only in the reply filed on 05 October 2007.

This application contains claims 33-37, 39 and 44-56 drawn to an invention nonelected with traverse in Paper filed on 05 October 2007. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 1, 2, 8, 11 and 12 are under examination in the instant office action.

Withdrawn Rejections

Any rejection pertaining to newly withdrawn claims 5, 17, 22, 23 and 25 is hereby withdrawn as moot, since the claims are no longer under consideration.

The rejection of claims 1, 2, 8, 11 and 12 under 35 U.S.C. 112, first paragraph, for scope of enablement is withdrawn in response to applicants arguments and submitted evidence, i.e. Exhibit A, which support the view that the skilled artisan can make and use functional variants as recited by the claims.

The rejection of claims 1, 2 and 8 under 35 U.S.C. 102(b) as being anticipated by Heyninck et al. (Mol Cell Biol Res Commun. 2001 Sep;4(5):259-65; Cite No. CI on IDS dated 13 June 2005) is withdrawn in response to the amendment of the claims to require TRCP1 (no longer in the alternative). Heyninck et al. do not explicitly disclose TRCP1.

The rejection of claims 11 and 12 under 35 U.S.C. 103(a) as being unpatentable over Heyninck et al., and further in view of Einhauer et al. (The FLAG peptide, a versatile fusion tag for the purification of recombinant proteins. J Biochem Biophys Methods. 2001 Oct 30;49(1-3):455-65) is withdrawn in response to the amendment of the claims to require TRCP1 (no longer in the alternative). Neither Heyninck et al. nor Einhauer et al. explicitly disclose TRCP1.

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 2, 8, 11 and 12 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the reply filed on 14 October 2008, applicants assert that the specification sufficiently describes the claimed invention and that the term "functional variant" is well defined in the specification. Applicants assert that the specification teaches that a variant includes chimeric proteins, fusion proteins, mutant proteins, proteins having similar but non-identical sequences, protein fragments, mimetics, etc, so long as the variant has at least a portion of an amino acid sequence of a native protein, or at least a portion of an amino acid sequence of substantial sequence identity to the native protein. Applicants assert that a "functional variant" includes a variant that retains at least one function of the native protein. Applicants assert that in *Ex parte Bandman*, No. 2004-2319, (BPAI 2005), the Board found that the claims directed to a naturally occurring amino acid (or polynucleotide) sequence at least 95% identical to the disclosed amino acid (or polynucleotide) sequence were enabled and met the written description requirement, even in the absence of explicitly reciting a functional requirement of the claimed sequences. Applicants assert that the Board also compared the circumstances of *Bandman* with those faced by the Federal Circuit in *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 296 F.3d 1316 (Fed. Cir. 2002). Applicants assert that in *Enzo Biochem*, the Federal Circuit determined that an "[a]dequate written description may be present for a genus of nucleic acids based on their hybridization properties, 'if they hybridize under highly stringent conditions to known sequences because such conditions dictate that all species within the genus will be structurally similar.'" Applicants assert that functions of some components of the protein complex (e.g. TNF, TNFR, and NAK) were known in the art long before the filing of the subject application.

Applicants' arguments have been fully considered and are not found persuasive. Although the claims have been amended to recite 95% identity language, all of the claims under examination require the use of a "functional variant" of the full-length polypeptides. As stated by applicants, the specification (e.g. at p.12) teaches that a variant includes chimeric proteins, fusion proteins, mutant proteins, proteins having similar but non-identical sequences, protein fragments, mimetics, etc, so long as the variant has at least a portion of an amino acid sequence of a native protein, or at least a portion of an amino acid sequence of substantial sequence identity to the native protein. Applicants also assert that a "functional variant" includes a variant that retains at least one function of the native protein. However, the portions of the specification referred to above do not describe which amino acid residues are present in the genus of "functional variants" as recited by the claims. Although the specification provides a few examples of variants by reciting percent homology language, it fails to disclose the structures common to all members of the genus of proteins encompassed by the broad definition of "functional variants" provided by applicants. The specification does not disclose the structure of all variant polypeptides encompassed "functional variants." The specification fails to disclose which regions of the claimed full-length polypeptides responsible for proper function, which is stated to be common to all members of each genus. In the absence of a known or disclosed correlation between structure and function, claims which encompass variants defined by their function are generally not considered described. Applicants are directed to the recently-published guidelines on interpretation of the written description requirement, available on the internet at:

<http://www.uspto.gov/web/menu/written.pdf> . See in particular Examples 9 and 10, drawn to protein variants including those with recited functions. Since the specification does not disclose which amino acid residues are common to all "functional variants" encompassed by the claims and does not disclose which structures are either necessary or sufficient such that members of each polypeptide genus have the required activity, the claims do not meet the written description requirement.

Furthermore, in *Ex parte Bandman*, the specification the claims were directed to a naturally occurring amino acid (or polynucleotide) sequence at least 95% identical to the disclosed amino acid (or polynucleotide) sequence were enabled and met the written description requirement, even in the absence of explicitly reciting a functional requirement of the claimed sequences. This is distinguished from the instant claims which encompass "functional variants" that do not require 95% homology to the full-length proteins. Therefore, *Bandman* is not controlling. Similarly, *Enzo Biochem*, is not controlling because the claims do not encompass nucleic acid molecules or hybridization conditions.

Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016 (Fed. Cir. 1991).

Applicants are reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Conclusion

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory S. Emch whose telephone number is (571) 272-8149. The examiner can normally be reached 9:00 am - 5:30 pm EST (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey J. Stucker can be reached at (571) 272-0911. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G.E./

Gregory S. Emch
Patent Examiner
Art Unit 1649
26 May 2009

/Jeffrey Stucker/
Supervisory Patent Examiner, Art Unit 1649